AMENDMENTS TO THE CLAIMS

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended). A data communication method for exchanging messages, under a system environment constituted of a plurality of objects which executes message communication, between a complex object constituted of a plurality of objects having execution seriality and an independent object external to said complex object, said data communication method comprising the steps of:

(a) temporarily storing one or more messages directed from an object within said complex object to said independent object external to said complex object; ~~and~~

(b) creating a history of message communications of the objects within said complex object;

(c) determining that said complex object and said independent object have entered a predetermined relationship on the basis of said history of message communications; and

~~(b)~~ (d) sending ~~the~~ said one or more stored messages to said independent object in a single operation when said complex object and said independent object enter ~~a~~ said predetermined

relationship.

Claim 2 (Currently Amended). The data communication method according to Claim 1, wherein said complex object is constituted of a plurality of objects ~~which can be invoked in a manner equivalent to~~ supporting a function call which does not cause a context switch.

Claims 3-4 (Canceled).

Claim 5 (Previously Presented) The data communication method according to Claim 1, wherein said step of (a) temporarily storing controls message storing in accordance with a relationship between said complex object and said independent object.

Claim 6 (Previously Presented) The data communication method according to Claim 1, wherein said step of (a) temporarily storing controls message storing in accordance with a status of said independent object.

Claim 7 (Previously Presented) The data communication method according to Claim 1, wherein said step of (a) temporarily storing controls message storing on a destination-by-destination basis when

the one or more stored messages are directed from the object within said complex object to a plurality of independent objects external to said complex object.

Claim 8 (Currently Amended) The data communication method according to Claim 1, further comprising the step of ~~(d)~~ (e) determining whether to store or immediately send the one or more messages in accordance with a relationship between ~~said complex object, which sends the one or more messages, and said independent object, which receives the one or more messages, with respect to~~ a scheduling priority level and an interrupt priority level of ~~the~~ respective execution threads ~~thereof~~ of said object within said complex object being a source of said messages and said independent object being a destination of said messages.

Claim 9 (Previously Presented) The data communication method according to Claim 1, wherein said system constituted of a plurality of objects is an object-oriented operating system constituted of a plurality of concurrent objects.

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Claim 10 (Previously Presented) The data communication method according to Claim 1, wherein said system constituted of a plurality of objects is one of an application program and a device driver constituted of a plurality of concurrent objects.

Claim 11 (Currently Amended) A data communication apparatus for exchanging messages, under a system environment constituted of a plurality of objects which executes message communication, between a complex object constituted of a plurality of objects having execution seriality and an independent object external to said complex object, said data communication apparatus comprising:

(a)   means for temporarily storing one or more messages directed from an object within said complex object to said independent object external to said complex object; ~~and~~

(b)   means for creating a history of message communications of the objects within said complex object;

(c)   means for determining that said complex object and said independent object have entered a predetermined relationship on the basis of said history of message communications; and

~~(b)~~ (d) means for sending ~~the~~ said one or more stored messages to said independent object in a single operation when said complex object and said independent object enter ~~a~~ said predetermined relationship.

Claim 12 (Currently Amended) The data communication apparatus

according to Claim 11, wherein said complex object is constituted of a plurality of objects ~~which can be invoked in a manner equivalent to~~ <u>supporting</u> a function call which does not cause context switch.

Claims 13-14 (Canceled).

Claim 15 (Previously Presented) The data communication apparatus according to Claim 11, wherein said (a) means for temporarily storing controls message storing in accordance with a relationship between said complex object and said independent object.

Claim 16 (Previously Presented) The data communication apparatus according to Claim 11, wherein said (a) means for temporarily storing controls message storing in accordance with a status of said independent object.

Claim 17 (Previously Presented) The data communication apparatus according to Claim 11, wherein said (a) means for temporarily storing controls message storing on a destination-by-destination basis when the one or more stored messages are directed from the object within said complex object to

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a plurality of independent objects external to said complex object.

Claim 18 (Currently Amended) The data communication apparatus according to Claim 11, further comprising ~~(d)~~ (e) means for determining whether to store or immediately send the one or more stored messages in accordance with a relationship between ~~said complex object, which sends the one or more messages, and said independent object, which receives the one or more stored messages, with respect to~~ a scheduling priority level and an interrupt priority level of ~~the~~ respective execution threads ~~thereof~~ of said object within said complex object being a source of said messages and said independent object being a destination of said messages.

Claim 19 (Previously Presented) The data communication apparatus according to Claim 11, wherein said system constituted of a plurality of objects is an object-oriented operating system constituted of a plurality of concurrent objects.

Claim 20 (Previously Presented) The data communication apparatus according to Claim 11, wherein said system constituted of a plurality of objects is one of an application program and a device driver constituted of a plurality of concurrent objects.

Claim 21 (Currently Amended). A computer-readable storage medium storing a computer program for exchanging messages, under a system environment constituted of a plurality of objects which executes message communication, between a complex object constituted of a plurality of objects having an execution seriality and an independent object external to said complex object, said computer program comprising the steps of:

(a) temporarily storing one or more messages directed from an object within said complex object to said independent object external to said complex object; ~~and~~

(b) creating a history of message communications of the objects within said complex object;

(c) determining that said complex object and said independent object have entered a predetermined relationship on the basis of said history of message communications; and

~~(b)~~ (d) sending ~~the~~ said one or more stored messages to said independent object in a single operation when said complex object and said independent object enter ~~a~~ said predetermined relationship.

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